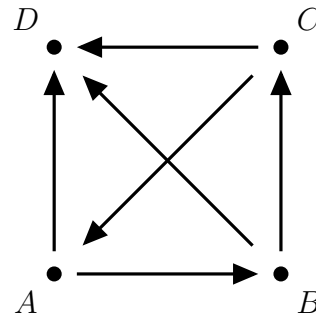


### Quiz 4

1. Consider the following preference schedule, with comparison graph on the right, and answer the ensuing questions.

1	2	1	1	2	2
<i>D</i>	<i>D</i>	<i>D</i>	<i>A</i>	<i>B</i>	<i>C</i>
<i>A</i>	<i>B</i>	<i>C</i>	<i>B</i>	<i>C</i>	<i>A</i>
<i>B</i>	<i>C</i>	<i>A</i>	<i>C</i>	<i>A</i>	<i>B</i>
<i>C</i>	<i>A</i>	<i>B</i>	<i>D</i>	<i>D</i>	<i>D</i>



(a) List all primitive dominating sets for this example (1pt each).

$$\mathcal{D}_A = \{A, B, C\}$$

$$\mathcal{D}_B = \{A, B, C\}$$

$$\mathcal{D}_C = \{A, B, C\}$$

$$\mathcal{D}_D = \{A, B, C, D\}$$

(b) Are there any other dominating sets for this example? Circle one (1 pt):    Yes     No

(c) What is the Smith set? (1 pt)     $S = \{A, B, C\}$

(d) What is the winner set for plurality? (1 pt)     $W_P = \{D\}$

2. Circle T if the claim is true, F if the claim is false. (1pt each)

(a) If  $X$  is a Condorcet candidate, then  $X$  is a Smith winner.     T    F

(b) If  $X$  is a Majority candidate, then  $X$  is a Smith winner.     T    F

(c) If  $X$  is a plurality winner, then  $X$  is a Smith winner.    T     F

(a) Exercise 4.4 - [Solution](#)

(b) Exercise #4 from [Chapter 4 HW](#)

(c) Counterexample on this quiz -  $D$  wins by plurality but  $D \notin S$ .